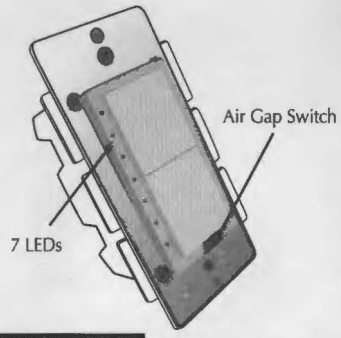
dragon tech



This product speaks with other Z-Wave certified devices

Wireless Dimmer Module

WD-100
In Wall Dimmer

INTRODUCTION

dragon tech™ WD-100 is a member of the Z-Wave® family and communicates with other Z-Wave certified devices in a control network. WD-100 replaces a standard in-wall light switch and turns it into a Z-Wave controlled network device with dimming and On/Off light control. Each Z-Wave device serves as a node to repeat the signal in the network, thus, extending the overall Z-Wave mesh wireless network range. Different types and brands of Z-Wave devices can be associated with dragon tech WD-100 in your system and they will work together to optimize and expand the coverage of your Z-Wave network. Once setup is completed, you can enjoy the convenience and leisure which WD-100 offers.

FEATURES

- Works with incandescent and dimmable florescent (CFL), or LED lighting
- 7 LED indicators for ON/OFF/Dimming level status
- Can be controlled wirelessly or manually
- Fits into standard single or multiple gang junction box and standard wall plates
- Decorative keypad can be replaced manually to match color with other wall switches
- Over-The-Air firmware upgrade available with compatible gateway, Z-Wave static controller, PC and software
- Z-Wave 500 Series module inside
- Internal resettable fuse to protect from surge current
- Manual reset capability

! WARNING !

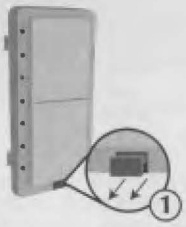
RISK OF FIRE, ELECTRICAL SHOCK & BURNS
DO NOT USE WITH MEDICAL AND LIFE SUPPORT INSTRUMENT

No user serviceable parts are in this module
The lighting connected to the WD-100 must not exceed 600W incandescent, 150W dimmable CFL/LED.

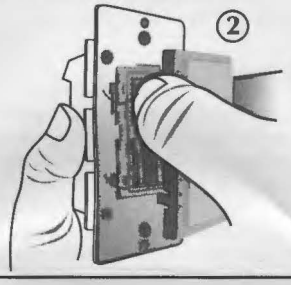
CAUTION: To Reduce the Risk of Overheating And Possible Damage To Other Equipment, Do Not Install To Control A Receptacle, A Motor-Operated Appliance, A Non-Dimmable Fluorescent Lighting Fixture, Or A Transformer-Supplied Appliance

The color of the keypad switch is changeable by the following method,

1. Lift the air gap switch up to avoid electrical shock



2. Push side tabs in and lift the cover plate up to release



A Z-Wave certified controller of either portable or static is capable of setting up dragon tech products in your desired network. Once the module is added, you may assign it to a Group. change its reaction when the All command ON or OFF is received. Furthermore, it can be set in Association with another Z-Wave device to perform a specific function. Please refer to the instructions manual of your remote controller for details and procedures on how these settings can be done.
Please note that the module will be OFF after a power failure
About the rocker switch:
There is only 1 rocker switch on this module for manual operation that allows you to

1. Turn the connected lighting ON/OFF and DIM by tapping the switch. Tapping and releasing the upper part of the rocker turns the lighting ON. Tapping and releasing the lower part of the rocker turns the lighting OFF. Press and hold the upper part of the rocker to Dims Up the lighting. Press and hold the lower part of the rocker to Dim Down the lighting. Simply release the rocker when the desired brightness level is reached during dimming.

2. Add(Include) or Delete(Exclude) the module to/from your Z-Wave network with your primary controller. Please refer to the instructions manual of your gateway or remote controller for details and procedures on how these actions can be done. Normally, the sequence is as follows: when the inclusion (or exclusion) process is prompted by your primary controller, single click and release the rocker switch => the controller should show that the action was successful => if the controller shows it was a fail, repeat the procedure.

Note: the orientation of the ON/OFF on the rocker switch can be inverted by changing the following configuration with a controller(if supported)
Parameter 4
Length: 1 byte
Valid values: 0 or 1 (default 0)

If value = 0, the connected light will turn ON by pressing the top side of the rocker switch and turn OFF by pressing the bottom side.
If value = 1, the connected light will turn OFF by pressing the top side of the rocker switch and turn ON by pressing the bottom side.
About the 7 LED indicators:
There are in-line 7 LED indicators on this module to display the connected lighting status.

All 7 LED indicators are ON when the connected lighting is at full brightness (100%)

All 7 LED indicators are OFF when the connected lighting is shut off
(0%)

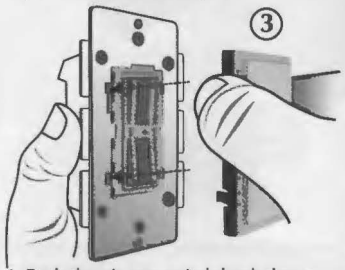
Only the bottom 4 LED indicators are ON when the connected lighting is at around half of it's full brightness
(50-60%)

Note: there are some occasions when the lighting is dimmed down to the minimum brightness level(only the bottom LED is ON) but it appears OFF visually. Depending on the lighting devices used, the behaviors vary. You may check the actual lighting status with the indication of the bottom LED

By default, the LED indicators will go off in a few seconds after showing the dimming level. You may check the lighting status by tapping the top of the rocker or the corresponding ON key on the controller to reactivate the LEDs

About dimming:
The time interval of brightness change between dimming up and down can be adjusted by changing the following configuration with a controller(if supported)

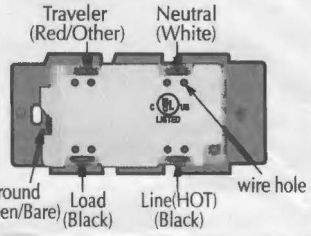
3. Align the tabs of the replacement cover plate and push to snap in



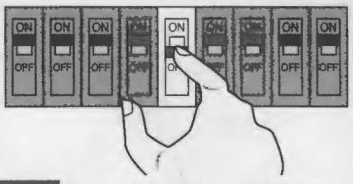
4. Push the air gap switch back down

SETUP

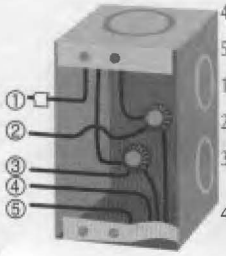
Step 1 Identifying the wiring terminals on the module



Step 2 WARNING ! RISK OF SHOCK ! Make sure power is OFF before wiring !



Step 3 Remove the wall plate and the existing switch(if mounted) at your preferred installation location. You should label the wires connected to the screw terminals before disconnecting the switch. Please check that the wiring configuration below is present in the wall switch box, otherwise consult a qualified electrician.


4 wires for 2-way circuit
5 wires for 3-way circuit
1. Line(Hot) - Black
2. Neutral - White
3. Ground – Green or Bare
4. Traveler (3-way) Red or Other
5. Load - Black

Wiring Information

Use copper wires only

UL specification: the tightening torque for the screws is 14 Kgf-cm (12 lbf-in)

Strip insulation 5/8" (16mm)

Wire connection can be made either to

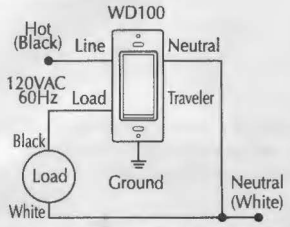
Screw terminal

14 AWG or larger rated at least 80°C

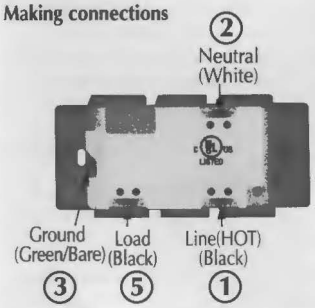
Hole

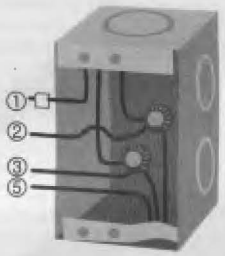
14 AWG rated at least 80°C

2-way circuit



Making connections





The Traveler terminal is not used in a 2-way circuit. Do not remove the insulation tape on the Traveler terminal in this application

Parameter 9 (level)
Length: 1 Byte
Valid Values: 1-99 (default = 1), indicates the number of levels the lighting will change when the timer runs out.

Parameter 10 (timer)
Length: 1 Byte
Valid Values: 1-255 (default = 3), indicates the time duration of each level.

The resolution is 10 milliseconds. For example, a default value of 3 means the timer runs out every 30 milliseconds. Using the combinations of these 2 parameters, you can create a dim rate adjustment range as

can create a dim rate adjustment range as short as 10 milliseconds to a very slow dim rate.

About the Z-Wave 500 Series module:
You can use a Z-Wave certified portable or static controller to communicate with the module.

Depending on the capability of your controller or gateway software, the following simple to advanced operations can be performed. Please refer to the controller's or gateway manual for details.

1. Turn the connected lighting On/Off and Dim
2. Add(Include) or Delete(Exclude) your WD-100 to/from your network
3. Assign your WD-100 to a specific Group and/or to include your WD-100 as part of your All ON or OFF command
4. Over-the-Air firmware update by your gateway or static controller
5. Lifeline function which automatically notifies the associated modules and the network that a manually reset device is no longer in the network, thus, the corresponding association becomes invalid

Association:

1. WS-100 supports association command class.
2. WS-100 only supports group #1 for lifeline communication.
3. You can associate up to 5 Z-Wave devices to group 1.
4. Lifeline association only supports the "manual reset" event.
5. For instructions on how to "set lifeline associate" , please refer to your wireless controller instructions.

SPECIFICATIONS

Model: WD-100
Input power: 120 VAC, 60 Hz.
Max output loading: 1x gang box 600W incandescent, 150W dimmable CFL/LED
2x gang box 500W incandescent, 125W dimmable CFL/LED
3x gang box 400W incandescent, 100W dimmable CFL/LED

Radio frequency: 908.4/916 MHz.
Wireless range: up to 130ft line of sight between the controller and the other available nodes.
Normal operating temperature: 77°F (25°C)
For indoor use only.

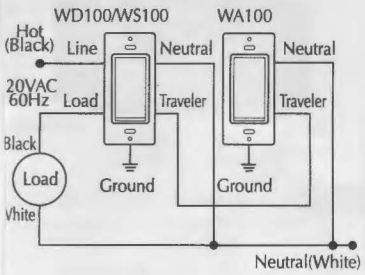
Interoperability with Z-Wave devices
A Z-Wave network can integrate devices from various classes of products, and these devices can be made by different manufacturers. The dragon tech product introduced in this instructions manual has a Z-Wave certification which guarantees such an interoperability.

FCC ID: 2ABWCWD100

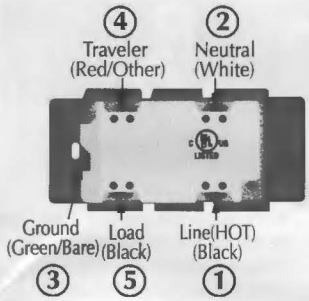
The Federal Communication Commission Radio Frequency Interference Statement includes the following paragraph:
The equipment has been tested and found to comply with the limits for a Class B Digital Device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment uses, generates and can radiate radio frequency energy and, if not installed and used in accordance with the instruction, may cause harmful interference to radio communication. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver

3-way circuit



Making connections

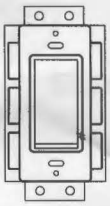


Please refer to WA-100 user manual for wiring instructions of the auxiliary switch. The maximum length of Traveler wire may not exceed 200ft.

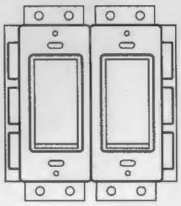
Gang Box

To install the WD-100 in a gang or J box, the tabs on the sides of the metal yoke may need to be removed. For single gang switch, no changes should be required. For dual or higher gang configuration where switches are next to each other, the tabs need to be removed. Simply take a pair of pliers, grab the tabs and wiggle until the tabs break off.
This will lower the electrical rating of the module. Please refer to the following details

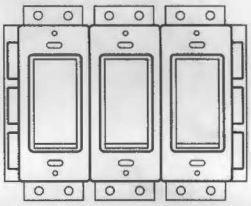
1x gang box
rating: 600W
incandescent
150W dimmable
CFL/LED
with 2 side tabs



2x gang box
rating: 500W
incandescent
125W
dimmable
CFL/LED
with 1 side
tabs



3x gang box
rating: 400W incandescent
100W dimmable CFL/LED
with no side tabs



Step 4 When proper wiring is completed, secure the module to the wall box. Restore power to the circuit to test if the connected lighting can be turned ON/OFF/Dim manually by the rocker on the module before remounting the wall plate. Also observe the status change of the LED indicators to ensure the module is in normal operating mode. If WA-100 Auxiliary Switch is used for a 3-way connection, please also test if it can control the lighting.

Step 5 Add(Include) the module into your network by a Z-Wave certified controller. Please refer to the controller's instructions manual for details.

Manual Reset

Note: If Inclusion still fails after the 2nd attempt, you need to first reset the module before repeating the above steps. The manual reset method is as follows,

1. Turn the connected lighting ON with the rocker

- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help

Operation is subject to the following two conditions:

- This device may not cause interference
- This device must accept any interference, including interference that may cause undesired operation of the device.

Important Note: To comply with the FCC RF exposure compliance requirements, no change to the antenna or the device is permitted. Any change to the antenna or the device could result in the device exceeding the RF exposure requirements and void user's authority to operate the device.

Caution: Exposure to Radio Frequency Radiation. To comply with FCC/IC RF exposure compliance requirements, a separation distance of at least 20 cm must be maintained between the antenna of this device and all persons. This device must not be co-located or operating in conjunction with any other antenna or transmitter.

IC: 11786A-WD100

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions:

1) This device may not cause interference, and
2) This device must accept any interference, including interference that may cause undesired operation of the device.

Z-Wave is a registered trademark of Sigma Design

WARRANTY

dragon tech warrants to the original purchaser of this product that for the warranty period, this product will be free from material defects in materials and workmanship. The foregoing warranty is subject to the proper installation, operation and maintenance of the product in accordance with installation instructions and the operating manual supplied to customer. Warranty claims must be made by customer in writing within 30 days of the manifestation of a problem. dragon tech's sole obligation under the foregoing warranty is to repair, replace or correct any such defect that was present at the time of delivery, or to remove the product and to refund the purchase price to customer. The warranty does not extend to consequential or incidental damage to other products that may be used with this product. For inquiry and customer service, email to support@dragontechind.com

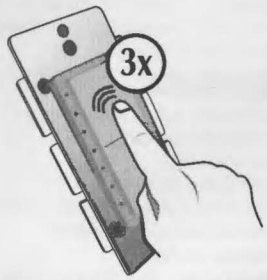
All brand names shown are trademarks of their respective owners

Warranty period: limited 1 year from date of purchase

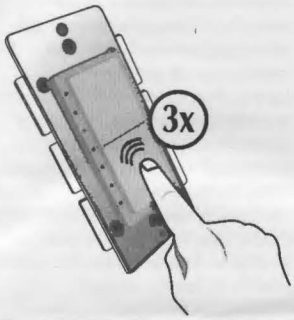
dragon tech Products
RM 302 Hanley House,
776-778 Nathan Rd.,
Mongkok, Kowloon, Hong Kong

WD100_08292014_En_v1.5

2. Quickly tap the top side(ON) of the rocker 3 times



Then, quickly tap the bottom side(OFF) of the rocker 3 times



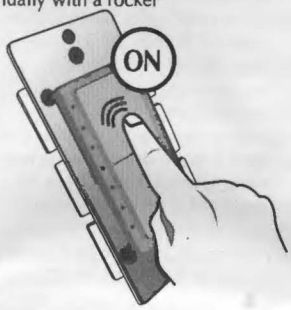
If you see the lighting turns OFF, it means that the module has been reset successfully and you may retry Step. 5 above to add the module into your network. Otherwise, please repeat the manual reset procedures.

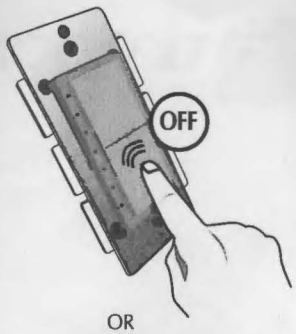
Note: if the module is previously Added(Included) in your network, resetting it locally does not mean it has been removed from your network. You may still need to Delete(Exclude) the module from the network by your controller if desired.

Use the manual reset procedure only in the event that the network primary controller is lost or otherwise inoperable.

BASIC OPERATION

The connected lighting can be controlled manually with a rocker





OR

Wirelessly with a remote controller